

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	William D. Brown, et al.	§	ART UNIT NO.: 1731
		§	
FILED:	December 7, 2000	§	EXAMINER: C. Fiorilla
		§	
SERIAL NO.:		§	
		§	
TITLE:	<i>Process and Apparatus for</i>	§	DOCKET NO. 23354/49C2
	<i>Sequential Multi-Beam Laser</i>	§	
	<i>Processing of Materials</i>	§	

**PRELIMINARY AMENDMENT**

The Assistant Commissioner of Patents  
Washington, DC 20231

Dear Sir:

Please enter this **Preliminary Amendment** prior to any substantive examination of this Continuation. The following Amendments are respectfully submitted.

**AMENDMENTS**

**In the specification**

At page 1, line 2, please delete "This" and insert therefore:

This application is a continuation application of U.S. Patent Application Serial No. 08/946,712 filed October 8, 1997, which claims priority of U.S. Provisional Application Serial No. 60/028,250 filed October 8, 1996.

**In the Claims**

**PLEASE CANCEL CLAIMS 2 AND 3 BEFORE CALCULATION OF THE FILING FEE. AFTER GRANT OF A FILING DATE FOR THIS CONTINUATION APPLICATION, BUT BEFORE CALCULATION OF THE FILING FEE, PLEASE CANCEL CLAIM 1.**

**PLEASE ADD THE FOLLOWING NEW CLAIMS:**

4. An apparatus for processing a diamond film substrate, said apparatus comprising:
  - (a) a holder for receiving the diamond film substrate; and
  - (b) a laser system configured to first direct a first wavelength of laser light toward the holder at a diamond film substrate having a surface, said surface having an initial surface roughness,  $R_0$ , to both evaporate a portion of the substrate surface and create a structurally weakened surface having an intermediate surface roughness,  $R_I$ ; and  
  
further configured to subsequently direct a second wavelength of laser light to at least a portion of the structurally weakened substrate surface having an intermediate surface roughness,  $R_I$ , to remove the structurally weakened surface to modify the surface of at least a part of said portion to a final surface roughness,  $R_F$ , wherein said first and second wavelengths of laser light are different wavelengths of laser light.
5. The apparatus of claim 4 wherein the first wavelength is greater than the second wavelength.

6 The apparatus of claim 4 wherein the first wavelength is less than the second wavelength.

7. The apparatus of claim 4 wherein the laser system is comprised of a first laser system configured to first direct a first wavelength of laser light toward the holder at a diamond film substrate having a surface, said surface having an initial surface roughness,  $R_0$ , to both evaporate a portion of the substrate surface and create a structurally weakened surface having an intermediate surface roughness,  $R_i$  and second laser system configured to subsequently direct a second wavelength of laser light to at least a portion of the structurally weakened substrate surface having an intermediate surface roughness,  $R_i$ , to remove the structurally weakened surface to modify the surface of at least a part of said portion to a final surface roughness,  $R_F$ .

8. An apparatus for processing a diamond film substrate, said apparatus comprising:

- (a) a holder for receiving the diamond film substrate; and
- (b) a first laser system configured to first direct a first wavelength of laser light toward the holder at a diamond film substrate having a surface, said surface having an initial surface roughness,  $R_0$ , to both evaporate a portion of the substrate surface and create a structurally weakened surface having an intermediate surface roughness,  $R_i$ ; and
- (c) a second laser system configured to subsequently direct a second wavelength of laser light to at least a portion of the structurally weakened substrate surface having an intermediate surface roughness,  $R_i$ , to remove the structurally weakened surface to modify the surface of at least a part of said portion to a final surface roughness,  $R_F$ ;

wherein said first and second wavelengths of laser light are different wavelengths of laser light.

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## REMARKS

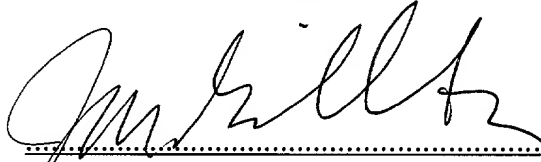
A Notice of Allowance was received in parent Application Serial No. 08/946,712, noting allowance of method claims for processing a diamond film substrate.

A comparison of the allowed independent method claim 1 and current pending claim 4 is shown in the table below. Pending claims 4-8 are believed to be patentable for the same reasons that method claim 1 was allowed.

Allowed Method Claim 1	Pending Claim 4
<p>A method for processing a diamond film substrate said method comprising:</p> <p>(a) applying a first wavelength of laser light to a diamond film substrate having a surface, said surface having an initial surface roughness, <math>R_0</math>, to both evaporate a portion of the substrate surface and create a structurally weakened surface having an intermediate surface roughness, <math>R_i</math>; and</p> <p>(b) applying a second wavelength of laser light to at least a portion of the structurally weakened substrate surface having an intermediate surface roughness, <math>R_i</math>, to remove the structurally weakened surface to modify the surface of at least a part of said portion to a final surface roughness, <math>R_F</math>, wherein said first and second wavelengths of laser light are different wavelengths of laser light.</p>	<p>An apparatus for processing a diamond film substrate, said apparatus comprising:</p> <p>(a) a holder for receiving the diamond film substrate; and</p> <p>(b) a laser system configured to first direct a first wavelength of laser light toward the holder at a diamond film substrate having a surface, said surface having an initial surface roughness, <math>R_0</math>, to both evaporate a portion of the substrate surface and create a structurally weakened surface having an intermediate surface roughness, <math>R_i</math>; and</p> <p>further configured to subsequently direct a second wavelength of laser light to at least a portion of the structurally weakened substrate surface having an intermediate surface roughness, <math>R_i</math>, to remove the structurally weakened surface to modify the surface of at least a part of said portion to a final surface roughness, <math>R_F</math>, wherein said first and second wavelengths of laser light are different wavelengths of laser light.</p>

If it would be of assistance in resolving any issues in this application, the Examiner is kindly invited to contact applicant's attorney Mark Gilbreth at (713) 227-1200, or in his absence Dr. Mary Gilbreth.

Respectfully submitted,



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J. M. (Mark) Gilbreth, Registration No. 33,388  
Attorney for Applicants

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GILBRETH & ASSOCIATES, P.C.  
PO Box 61305  
HOUSTON, TEXAS 77208-1305  
713/227-1200